

**ILLINOIS COMMERCE COMMISSION**

**DOCKET No. 16-\_\_\_\_\_**

**DIRECT TESTIMONY**

**OF**

**JERRY A. MURBARGER**

**Submitted On Behalf**

**Of**

**AMEREN TRANSMISSION COMPANY OF ILLINOIS**

**April 25, 2016**

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**I. INTRODUCTION**

**Q. Please state your name, address and current position.**

A. My name is Jerry A. Murbarger. My business address is 370 S. Main Street, Decatur, Illinois 62523-1479. I am a Transmission Design Specialist in the Transmission Line Design group at Ameren Services Company (Ameren Services). Ameren Services provides various services to Ameren Transmission Company of Illinois (ATXI or the Company) and to other Ameren Corporation (Ameren) subsidiaries. Ameren Services, on behalf of ATXI, is responsible for designing the new 345 kilovolt (kV) electric transmission line running across central Illinois from Missouri to Indiana (the Illinois Rivers Project or the Project).

**Q. Please summarize your educational background and professional experience.**

A. A summary of my educational background and professional experience is attached as an Appendix to my testimony.

**Q. What are your duties and responsibilities in your present position?**

A. My duties include designing transmission line projects for ATXI and other Ameren affiliates. I assist in selecting line routes that balance cost effectiveness and environmental impacts, ensuring that line design meets National Electrical Safety Code (NESC) requirements,

preparing baseline project cost estimates, managing project costs, and I serve as the technical lead in resolving any issues that arise during construction. While the scope of the transmission projects in which I am involved varies, each one includes the following elements: design of transmission line structures, selection of hardware, development of technical drawings, procurement of materials, scheduling of outages, and cooperation with other departments within Ameren Services, including real estate, vegetation management, environmental services and other engineering groups.

## **II. PURPOSE AND SCOPE**

### **Q. What is the purpose of your testimony in this case?**

A. The purpose of my testimony is to provide information regarding the route and schedule of construction for the Illinois Rivers Project. Specifically, I explain why it is important from a scheduling standpoint that the Illinois Commerce Commission (Commission) authorize ATXI to exercise eminent domain authority to acquire certain properties along the approved route between (1) Pawnee and Pana<sup>1</sup> and (2) Kansas and Sugar Creek, where negotiation efforts for land rights have been unsuccessful (the Unsigned Properties). I also discuss ATXI's construction plan and schedule for these segments of the Project. Finally, I discuss, from an engineering perspective, ATXI's need, in some situations, for specific access routes that are separate and apart from the 150-foot permanent right-of-way associated with the transmission line. ATXI witness Mr. Trelz also addresses the need for eminent domain authority for the Unsigned Properties, among other matters, in ATXI Exhibit 1.0.

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<sup>1</sup> Although this filing contains landowners primarily along the Kansas to Sugar Creek segment of the Project, it also presents a request for 8-509 authority over five primary landowners referred to as the Westerhold Group between Pawnee and Pana.

**III. STATUS OF LINE DESIGN**

**Q. Can you generally describe the process referred to as “final line design”?**

A. During final line design, Ameren Services personnel identify a proposed location for each transmission structure, choose the type and size of each structure, and order all the necessary hardware. Choosing the right structures and the proper structure locations ensures that the conductor will maintain the proper ground clearance required by the NESC. Choosing the proper hardware and insulators ensures that the line will operate safely and reliably.

**Q. What is the status of final line design for the Pawnee to Pana segment of the Project?**

A. The final line design process for this segment is near complete. Approximately 12% of the structures have been ordered to date. ATXI anticipates that approximately 60% of the structures will be ordered by the end of the last quarter of 2016. The related line hardware material will be ordered late in the last quarter of 2016. Test borings have been performed on parcels close to the substation near Pawnee. At this time, ATXI has performed 115 of the 200 test borings required. Test borings on the Unsigned Properties will be completed as soon as the necessary property rights can be acquired. These test borings are used to obtain information to help with foundation design.

**Q. What is the status of final line design for the Kansas to Sugar Creek segment of the Project?**

A. The final line design process for this segment is near complete. Approximately 28% of the steel structures have been ordered and the remainder will be ordered by the first quarter of 2017. All related line hardware material will be ordered no later than March 2017. During the

summer of 2016, test borings will be performed on parcels on which easements have been obtained. Additional test borings are used to obtain information to help with foundation design. Test borings on the Unsigned Properties for this segment will be completed as soon as the necessary property rights can be acquired. These test borings will be used to obtain information for foundation design.

#### **IV. PROJECT SCHEDULE**

**Q. What is the construction timeline for the Pawnee to Pana and Kansas to Sugar Creek segments of the Project?**

A. The anticipated in-service date for both the Pana to Pawnee and the Kansas to Sugar Creek segments is late 2018, and the design and construction activities for this segment are on schedule to meet these in-service dates. Foundation installation is anticipated to begin in February 2017. ATXI will begin installing structures and pulling conductor once enough consecutive foundations have been installed.

**Q. Generally, how long will it take to construct the Pawnee to Pana segment?**

A. The Pawnee to Pana segment is a total of 31.7 miles long. ATXI has scheduled approximately 15 months to construct this segment. Again, this construction timeline may vary, depending on the availability of construction crews.

**Q. How long will it take to construct the Kansas to Sugar Creek segment?**

A. The Kansas to Sugar Creek segment is a total of 33.6 miles long. ATXI has scheduled approximately 19 months to construct this segment. This construction timeline may vary, depending on the availability of construction crews.

86 **Q. How does the progress of land rights acquisition relate to the process of materials**  
87 **acquisition?**

88 A. Each structure must be individually designed to suit the terrain in the area where it will be  
89 installed, in order to meet NESC required clearances. Because the structures are individually  
90 designed with terrain in mind, each structure must be installed in the specific location for which  
91 it was designed. It can take up to 24 weeks for steel poles and dead-end structures to be  
92 delivered to the job site, after they are ordered. Dead-end structures are specially designed and  
93 can also take up to 24 weeks for delivery. Therefore, Ameren Services must design and order  
94 the structures as soon as practicable to stay on course with the proposed construction schedule.

95 **Q. Would the failure to obtain all necessary land rights along the Pawnee to Pana and**  
96 **Kansas to Sugar Creek segment of the Project in a timely manner delay the construction**  
97 **schedule?**

98 A. Yes. Any delay in the acquisition of the Unsigned Properties may delay structure  
99 foundation design, which, in turn, may further delay or complicate construction. This could have  
100 substantial implications for the timely completion of the Pawnee to Pana and Kansas to Sugar  
101 Creek segments, and the entire Illinois Rivers Project. As explained by ATXI witness Mr. Trelz,  
102 if ATXI is unable to acquire the Unsigned Properties by negotiation, it may take approximately  
103 one year to complete an eminent domain proceeding in circuit court. Therefore, ATXI is  
104 requesting eminent domain authority now in order to allow time to complete the circuit court  
105 process and then complete construction consistent with Project in-service dates.

106 **Q. What are the consequences of a delay in the construction schedule for the Pawnee to**  
107 **Pana and Kansas to Sugar Creek segments?**

A. The Project is necessary to address transmission and reliability needs in an efficient and equitable manner, and promote the development of an effectively competitive electricity market, as found by the Commission in Docket 12-0598. Delay in completing these segments will delay the benefits of the Project, including a more robust and reliable electric grid throughout the entire Project area.

**Q. Could delay of the Pawnee to Pana and Kansas to Sugar Creek segments result in delays in construction of the Project as a whole?**

A. Yes. ATXI prefers to utilize the same contractor crews to construct each segment of the Project. This practice is beneficial because the contractor gains experience from previous line work and is more efficient. Delay on a single segment may result in a trained labor crew standing idle, delaying construction of that segment, as well as the successive segments to which that crew has been assigned.

**V. RIGHT-OF-WAY WIDTH**

**Q. What permanent easement width is required to construct the Illinois Rivers Project where rights-of-way will be acquired?**

A. As I explained in my direct testimony in Docket 12-0598, a 150-foot wide permanent easement is generally required for longspan construction to provide adequate clearance from the 345 kV transmission line conductors to the edge of the right-of-way for operational and maintenance purposes.

**Q. Why is a 150-foot wide easement generally required for a 345 kV line?**

A. A 150-foot easement will provide adequate NESC clearances from the conductor to any buildings, trees or vegetation on the edge of the right-of-way (NESC Rule 234C.1).

Maintenance of this clearance is necessary for safe operation of the line. Ameren Services has developed a document titled Transmission Vegetation Management Program FAC-003-2 in response to NERC mandates. This document specifies all the vegetation clearance requirements.

**Q. Will ATXI require construction easements to construct the Transmission Line?**

A. ATXI may require temporary construction easements of up to 150 feet, in addition to the 150-foot wide permanent easement. Temporary construction easement will be necessary in limited circumstances where the construction contractor needs to set up equipment outside the 150-foot wide permanent easement.

**Q. Does ATXI require other access rights the easement area?**

A. In some circumstances, yes. ATXI needs access to the easement area in order to operate and maintain the line after it is constructed. If terrain or other factors make access over the permanent easement infeasible, ATXI may seek separate rights of access, including rights of ingress and egress across a landowner's property that allow ATXI personnel to reach the transmission line for repair or maintenance. ATXI may also require rights to access vegetation adjacent to the permanent easement area to ensure safe operation of the line.

**Q. In this case, is ATXI seeking eminent domain authority over any specific access routes that are separate and apart from the permanent 150-foot right-of-way associated with the transmission line?**

A. Yes. ATXI is seeking eminent domain authority for specific access routes on seven tracts where access via the transmission easement is impractical due to terrain or tract-specific circumstances. These tracts, and the reasons separate access is needed, are as follows:

- ILRP\_STPL\_ED\_131 (McNabb) – The terrain within the transmission line right-of-way at this location consists of steep hills, and deep ravines. ATXI is requesting a separate easement to allow access to the structures within this area from the nearest public roadway, Hill Road, from the north to the transmission line easement.
- A\_ILRP\_KS\_ED\_130 (Bishop) – The terrain in this area includes steep hills, large drainage ditches and creeks. The surrounding agricultural fields drain into these ravines, ditches and creeks, and into the nearby Mud Creek. ATXI is requesting a separate access easement to allow for access from the nearest public roadway, Berry Street, from the west to the transmission line easement in this area.
- A\_ILRP\_KS\_ED\_131 (Hewitt) – The transmission line right-of-way is centered over a large ravine just east of Mud Creek. ATXI is requesting a separate easement, paralleling the transmission line easement, to allow for access at the edge of the ravine.
- A\_ILRP\_KS\_ED\_133 (Hewitt) – The terrain in this area includes steep hills, large drainage ditches and creeks. The surrounding agricultural fields drain into these ravines, ditches and creeks, and into the nearby Mud Creek. ATXI is requesting a separate access easement to allow for access from the nearest public roadway, Berry Street, from the west to the transmission line easement in this area.
- A\_ILRP\_KS\_CL\_069 (Farris) – The terrain in this area includes steep hills, deep ravines, large ditches and creeks. The surrounding agricultural fields drain into these ravines, ditches and creeks and into the Clear Creek, a jurisdictional stream, which meanders in the low lying area below. ATXI is requesting a separate access easement to allow for

access from the nearest public roadway, E. Clear Creek Road, from the west to the transmission line easement in this area.

- A\_ILRP\_KS\_CL\_061 (Pound) – The terrain in this area includes steep hills, deep ravines, large ditches and creeks. The surrounding agricultural fields drain into these ravines, ditches and creeks, and into the Clear Creek, a jurisdictional stream, which meanders in the low lying area below. ATXI is requesting a separate access easement to allow for access from the nearest public roadway, E. Clear Creek Road, from the west to the transmission line easement in this area.

- A\_ILRP\_KS\_CL\_071 (Pound) – The terrain across the transmission right of way includes three significant ravines with steep side slopes. These ravines are deep with winding alignments. The adjacent agricultural fields drain to this area and eventually into the nearby Clear Creek. ATXI is requesting a separate access easement to allow for access from the nearest public roadway, E. Clear Creek Road, from the south to the transmission line easement in this area.

**Q. What width is required for these separate access routes?**

A. The width of these access routes is 50 feet, which is generally the amount of space needed to maneuver the type and size of equipment associated with the Project and the on-going maintenance of the line.

## **VI. CONCLUSION**

**Q. Does this conclude your direct testimony?**

A. Yes, it does.

**APPENDIX**

**STATEMENT OF QUALIFICATIONS  
JERRY A. MURBARGER**

I received an Associate of Applied Science degree from Lincoln Trail College in 1976. I worked for different companies until early 1989 in the metal fabrication industry designing material-handling equipment and high pressure American Society of Mechanical Engineers “ASME” Code Section VIII Pressure Vessels. In early 1989, I joined Soyland Power Cooperative (Soyland) as a draftsman/surveyor and advanced to engineering technician designing substations and transmission lines. As an engineering technician at Soyland, I was responsible for the design of several 69 kV and 138 kV transmission lines. I was involved in all aspects of the projects including establishing the line route, surveying the route, designing the line, ordering material, writing construction specifications, construction inspection and closing all project documents. I started with Illinois Power Company (Illinois Power) now AIC, in October 2000. Since then, I have been involved with maintenance and/or design of transmission lines and sub-transmission lines. Ameren considers transmission lines as those above 100,000 volts. The majority of my time has been in the maintenance area, where I have gained a solid background in the design and construction techniques of transmission lines. I am familiar with AIC’s transmission line design standards and design considerations including things such as: types of structures, hardware requirements, types of conductors, span limitations, structure location considerations, construction issues, safety and clearance requirements, and real estate considerations. Some of my responsibilities in the transmission maintenance group were to collect the semi-annual Aerial Patrol reports and Groundline Inspection Reports on AIC’s transmission lines. I typically participated in most of the aerial inspections in order to assess the condition of existing structures and their hardware. These inspection reports typically involved

summarizing any damage to structures such as broken or damaged cross arms, x-braces, v-braces, hardware, insulators, dampers, guy wires, as well as pole top deterioration. I was responsible for collecting all the reports and compiling the data. I was in charge of the wood pole Groundline Inspection program for the transmission structures. The purpose of this program is to ensure the integrity and reliability of our transmission structures. Although I did some inspections, the majority of the inspections were performed by independent companies who submitted their inspection reports to me. I identified which poles could be repaired and which ones needed to be replaced. If a pole had to be replaced, I would utilize AIC's standards to determine the required pole type and class to make the repairs. I determined the required repairs utilizing AIC standards, prioritized the repairs, prepare a material list, made a construction cost estimate for the repairs, and then submitted this information for budget approval. Once the budget was approved, I had the drawings updated, ordered the material and put a construction package together. I would obtain bids from several contractors, evaluate the bids and get approval to proceed with construction. It was my responsibility to follow the contractors' work through construction. Working through this process has given me a solid background in the design and construction requirements of transmission lines.

In addition to my daily responsibilities, I was part of AIC's emergency response team, which was established to assist with storm-related or emergency projects. Familiarity with AIC's transmission line design and construction standards was required to effectively perform this task.

With my wide range of transmission line maintenance experience, I transferred to the Transmission Lines Design Group of Ameren Services following Ameren's acquisition of Illinois Power in 2004. Ameren Services is a subsidiary of Ameren Corporation (Ameren) and

provides technical, advisory and financial services to other Ameren subsidiaries including AIC and ATXI. Since then, I have been working on design of new transmission line projects including cost estimates, route selection, and modifications to existing facilities. On this project, I will be a member of the transmission line design team for the proposed Transmission Line.